

### REMARKS/ARGUMENTS

Claims 10-13 and 18-19 are resubmitted in original form. Claims 1, 2, 9, 17 and 65 are amended. Claims 3-8, 14-16, 20-64 and 66 are canceled without prejudice or disclaimer of subject matter. No new claims are added. Accordingly claims 1-2, 9-13, 17-19 and 65 will be pending upon entry of the above amendment.

Claims 1-4, 7, 9-13, 15-19 and 64-65 were rejected under 35 U.S.C. 112 as failing to comply with the written description requirement. Claims 27-29 were rejected under 35 U.S.C. 112 as being indefinite. Claims 1-4, 13, 15-19 and 64-65 were rejected under 35 U.S.C. 103(a) as being unpatentable over Say et al. (US 6,603,343). Claims 7 and 10-12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Say et al. and Applicant's Admission. Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Say et al. in view of Ogata et al. (US 6,531,100). Claims 26-28 and 30-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Mirowsky et al. (US Patent Application no. 2003/0150222) in view of Say et al. Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Mirowsky et al. in view of Say et al. and further in view of Applicant's admission.

#### Claim Amendments

Independent claim 1 is amended to define a system "wherein [a] first adsorbent unit includes a first adsorbent material having a first isotherm curve for [a] pollutant, wherein [a] second adsorbent unit includes a second adsorbent material having a second isotherm curve for said pollutant [and] wherein said second isotherm curve is steeper than said first isotherm curve".

These features are described in the originally filed specification in paragraphs [0067], [0070]-[0074] and in originally filed claim 7.

Claims 2, 9, 17 and 65 are amended to provide a proper correspondence for the term "at least one photocatalytic oxidation unit " defined in amended claim 1

#### Examiner Interview

Applicant thanks the Examiner for his time and willingness to discuss this pending matter. A telephone interview was conducted with the Examiner on February 4, 2008 to discuss the rejection of the claims as made in the outstanding Office Action. Applicants proposed amending the independent claim to include definitions of features of original claim 7. This claimed arrangement would provide for multiple stage adsorption of a pollutant. As such, the proposed limitations would distinguish Applicant's invention over Say et al. While Say et al. may disclose first and second adsorbent units; it discloses a second adsorbent unit as one that captures photocatalytic reaction products. Applicant's second adsorbent unit, on the other hand, is provided to adsorb a second concentration of a pollutant adsorbed in the first adsorbent unit.

#### Claim Rejections – 35 USC 112

The Examiner rejected claim 1 and its dependent claims under 35 U.S.C. 112 because of an inclusion of a phrase "wherein the second photocatalytic unit is contiguous with the interior air space". This phrase is deleted from amended claim 1

For the above reasons, Applicant respectfully submits that claim 1 and its dependent claims are now in compliance with 35 U.S.C. 112. Reconsideration and withdrawal of the rejection of claims 1, 2, 9-13, 17-19 and 65 under 35 U.S.C. 112 is requested.

Say et al. (US 6,603,343)

Say et al. discloses a photocatalytic fluid purification system which may embody a so-called adsorbent "buffer" positioned upstream from photocatalytic units. Say et al. also discloses that there may some advantage to using a post-filter downstream from the catalytic units. A possible configuration for the post-filter is described as an "adsorbent bed" adapted to perform capture of conversion products of photocatalyzed reactions. Subassemblies of the system may be collectively installed in parallel or series so that they can be easily replaced as needed.

While Say et al. may disclose a possible presence of adsorbent units on an upstream and a downstream side of a photocatalytic unit, it does not disclose that two adsorbent units are adapted to adsorb the same pollutant. To the contrary, Say et al. discloses that a first adsorbent buffer is provided for an initially introduced pollutant and a second or downstream adsorbent bed is provided to capture a different pollutant i.e., "the conversion products of the photocatalyzed reactions" (See column 7, line 31-32)

Claim 1, on the other hand, defines a system "wherein the first adsorbent unit includes a first adsorbent material having a first isotherm curve for [a] pollutant, wherein the second adsorbent unit includes a second adsorbent material having a second isotherm curve for said pollutant [and] wherein said second isotherm curve is steeper than said first isotherm curve" Say et al.

does not teach use of a first and a second adsorbent unit for the same pollutant with a "photocatalytic oxidation unit located downstream from said first adsorbent unit and upstream from the second adsorbent unit". Furthermore, Say et al, does not teach or suggest use of multiple adsorbent materials with progressively steeper isotherm curves for adsorbing a pollutant at two different concentrations of the pollutant.

For the above reasons, Applicant respectfully submits that Say et al. does not teach or fairly suggest the subject matter of claim 1 nor any of the claims that dependent on claim 1. Reconsideration and withdrawal of the rejection of claims 1, 2, 9-13 and 17-19 under 35 U.S.C. 103(a) based on Say et al. is requested.

#### Applicant's Admissions

In citing Applicants' Admissions (page 21, lines 12-30) against claims 7, 10-12 and 29, the Examiner asserts that the Applicant has admitted that "selecting the appropriate adsorbent material for an adsorbent unit is a matter of design choice". But it must be noted that, in making the cited disclosure, Applicant has merely stated that varying operating conditions, expected pollution concentrations and the like may dictate some material choices for components of an adsorbent unit.

Claim 7 and 29 are cancelled in this paper, but the limitations of claim 7 are incorporated into amended claim 1 and its dependent claims 10-12.

Amended claim 1 does not define particular materials or isotherm curves but rather a relationship between relative steepness of isotherm curves for

materials of successive absorber units. Claim 1 defines that “[a] first adsorbent unit includes a first adsorbent material having a first isotherm curve for [a] pollutant, [a] second adsorbent unit includes a second adsorbent material having a second isotherm curve for said pollutant [and] said second isotherm curve is steeper than said first isotherm curve”. Applicant submits that the cited disclosure does not teach the principle of the invention defined in claim 1.

For the above reasons, Applicant respectfully submits that Applicant's Admission does not teach or fairly suggest the subject matter of claim 1 or any claims dependent on claim 1. Reconsideration and withdrawal of the rejection of claims 10-12 under 35 U.S.C. 103(a) based on Applicant's Admission is requested.

Ogata et al. ( US 6,531,100)

Ogata et al. teaches a particular structure for supporting a photocatalyst. But, there is no teaching or disclosure of a structure of an air quality system in Ogata et al. Claim 9 on the other hand, because of its dependency on claim 1, defines a novel and unobvious air quality system, including a specific structure of an air quality system.

For the above reason, Applicant respectfully submits that Ogata et al. does not teach or fairly suggest the subject matter of claim 9. Reconsideration and withdrawal of the rejection of claim 9 under 35 U.S.C. 103(a) based on Ogata et al. is requested.

Appl. No. 10/660,354  
Amdt. dated February 20, 2008  
Reply to Office action of December 21, 2007

### CONCLUSION

Applicant again would like to thank the Examiner for taking the time to discuss the proposed amendments in a telephone interview. Reconsideration and withdrawal of the Office Action with respect to claims 1-2, 9-13, 17-19 and 65 is requested. Applicant submits that claims 1-2, 9-13, 17-19 and 65 are now in condition for allowance. Early notice to that end is earnestly solicited.

In the event that the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 50-0851.

Respectfully submitted,

By: /Peter Tribulski /  
Peter Tribulski, Reg. No. 24,747  
Michael A. Shimokaji  
Attorney Reg. No. 32,303

Honeywell International, Inc.  
Law Dept. AB2  
P.O. Box 2245  
Morristown, NJ 07962-9806  
(310) 512-4886  
Attn: Oral Caglar